

FOREST RESOURCES COMMISSION

Background Paper

*British Columbia Community Employment Dependencies
- Planning & Statistics Division
Ministry of Finance & Corporate Relations*

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British Columbia
Community Employment Dependencies

FINAL REPORT

prepared for the
British Columbia Forest Resources Commission

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1. Introduction

In April of 1991, the British Columbia Forest Resources Commission published a number of background papers in conjunction with its publication of The Future of Our Forests. One of these papers, entitled *Local Employment Impacts of the Forest Industry* [1], was prepared by the Planning & Statistics Division (PSD) of the British Columbia Ministry of Finance & Corporate Relations.

This report developed a methodology for estimating the employment dependence of small communities in the province on the forest industry and applied the method to three specific communities. The report generated wide interest and there have been requests by communities, the Ministry of Forests, the Forest Resources Commission and other agencies for follow-up studies.

In August of 1991, the PSD undertook another study along the same lines, but with a more ambitious scope. In particular, the new study was intended to create a more reliable database, to incorporate improvements in methodology, to determine dependencies not only on forestry but on other driving sectors as well (including mining, fishing, and agriculture), and finally to develop these employment dependency estimates for communities throughout most of the province.

This report describes those findings.

Section 2 of this report outlines the methodology used. The results are presented in Section 3 and discussed in Section 4; Section 5 contains recommendations for further study. The Appendices provide greater detail about the individual steps and some of the subsidiary calculations.

The community areas in this study are the same as those in the *British Columbia Regional Index*. We have assumed that none of these areas are *autarkic* (self-sufficient). If an area produces wheat, for example, that wheat is exported from the area, is milled, and returns to the community in the form of flour. It is not grown, processed and consumed in the same community.

2. Methodology and Data Sources

Economic base methodology has a long history of application in studies of this type. In the seventies, F.L.C. Reed and Associates carried out studies [2, 3] which estimated forest sector multipliers for British Columbia and for certain selected sub-regions of the province. More recently, White et al [4] estimated forest sector dependence in rural British Columbia using data from the 1971 and 1981 Censuses.

2.1 A Brief Description of the Approach Used

The rationale of the economic base method is straight-forward:

1. allocate employment to the basic and nonbasic sectors of the economy
2. use this information to determine the dependence of the local economy on each of the basic sectors.

This method assumes that basic employment "drives" the economy and that nonbasic employment exists only to serve the community.

Because high-income jobs contribute more to the economy than low income jobs, we have further refined this method to take into account the average incomes associated with each industry.

Simply put, basic activity is fueled by demand outside the local area. Firms which export their products are clearly basic; even a sawmill whose lumber is used in construction in a community 50 kilometers away is engaged in basic activity. By this definition, tourism activity is also considered basic because it is driven by demands of nonresidents. Small firms which exist to support businesses which are basic themselves should also be considered basic. Examples of the latter would be machine shops or welders.

Basic activity includes more than industry-based employment. In this study, both the unemployed and retired were included in the basic sector. This is because these persons are funded externally by transfer payments, and do not provide services to local residents. Schwartz [5] endorses the inclusion of these two groups, as well as certain components of investment income.

Nonbasic activity serves only the residents of the community. Examples of nonbasic businesses include banks, dentists and hairdressers.

The major difficulty with this approach lies in classifying industries which serve both residents and nonresidents. Restaurants, for example, cater to both tourists and locals; a dairy operation may or may not serve a region larger than the local area.

In this study, the basic sector has been disaggregated into the following categories:

Forestry, including Wood Industries and Pulp & Paper
Mining
Fishing & Trapping
Agriculture
Accommodation and Food Services (AFS)
Other Basic Industries

The calculations are summarized in the following five steps and in the flow chart in Section 2.2:

1. allocate local area employment from the 1986 Census to the basic and nonbasic sectors.
2. update 1986 local area employment to 1990 using regional employment estimates from the Labour Force Survey.
3. estimate after-tax income associated with industry employment.
4. estimate after-tax income associated with Unemployment Insurance payments, pensions, and investment income.
5. calculate community employment dependencies for each of the basic sectors in each local area.

1. Allocate local area employment from the 1986 Census to the basic and nonbasic sectors. The foundation of our employment estimates is the 1986 Census. There is no more recent information that is as comprehensive or that has as high a level of accuracy. It provides experienced labour force by local area for 17 industry groups. (We have assumed that the distribution of employment among the industry groups is identical to that of the experienced labour force). These are allocated to the appropriate basic and nonbasic categories using the following reasoning.

Some industries have been allocated entirely to one sector. The **primary industries** - Fishing & Trapping, Forestry, Mining and Agriculture - are assumed to be entirely basic and are allocated to the appropriate basic sector. **Services** such as Communication, Utilities, Retail Trade, Finance, Insurance and Real Estate are allocated completely to the nonbasic sector.

Employment in the **manufacturing** sector could be in any of the basic sectors or in the nonbasic sector. Small area employment estimates, however, provide only total manufacturing employment. Another source of information is needed to assign employment to the appropriate sectors. The Manufacturers' Directory provides a listing of (and information about) manufacturing firms in the province. Each establishment is assigned to one of the sectors based on the products it makes. The proportions of employees in each of the sectors are used to disaggregate the total manufacturing employment estimate. (Appendix I provides a more detailed explanation).

Employment in **Health, Education and Government Services** was divided between the basic sector and the nonbasic sector using the modified location quotient method (described in Appendix II). The location quotient is a measure of relative concentration or specialization. Workers within the norm established by the

provincial economy are assumed to satisfy local demand - they are, in other words, nonbasic. Workers in excess of the provincial average are deemed to be basic.

The **Accommodation and Food Services** industries have employees in both the basic and nonbasic sectors. Because it is unlikely that local residents utilize Accommodation Services in their own community, we have assumed that all employment in this industry is basic. Restaurants and coffee shops, on the other hand, are used by both residents and nonresidents. The method used to split Accommodation Services from Food Services and allocate Food Services to the basic and nonbasic sectors is described in Appendix III.

The allocation of **Transportation, Wholesale Trade, Business Services and Construction** to the different sectors is a challenge. Clearly, logging trucks are a part of the basic forest sector; railway workers who transport coal should be assigned to the mining sector. Similarly, construction jobs associated with a new fish processing plant would be allocated to the fishing sector while jobs associated with the construction of grocery store would be nonbasic.

Because employment estimates in these industries are not separated into activity-specific categories, information from the British Columbia Input Output Model (BCIOM) is used to distribute employment in these industries to the basic and nonbasic sectors. Stated briefly, this method estimates how many local transportation jobs, for example, are generated by one local job in the forestry sector. Appendix IV describes this process in detail.

2. Update 1986 local area employment to 1990 using regional employment estimates from the Labour Force Survey. The 1986 Census supplies the most recent industry-specific employment estimates for small areas. Sub-provincial regional estimates are, however, available for 1990. Employment in the areas in each region are added together and are scaled up or down to agree with the 1990 industry-specific estimates.

Between 1986 and 1990, however, the geographical distribution of employment within each region has almost certainly changed. As a partial recognition of this, increases and decreases in employment due to the start-up or shut-down of major projects in the region are taken into account (see Appendix V).

3. Estimate after-tax income associated with industry employment. Because of the income disparity between industries, this study uses an income-based rather than a job-based approach. In 1990, the average weekly income in Mining was \$869; the comparable figure for Accommodation and Food Services was \$230. Clearly, the presence or absence of one job in Mining will have a greater impact on the local economy than one job in Accommodation and Food Services

Disposable income rather than Gross Earnings is more relevant in this study. Though taxes return to the local economy in the form of transfer payments, this type of income is counted separately. In any case, the value of taxes leaving a community is not necessarily equal to the value of transfer payments it receives. To approximate after-tax income we subtracted the 1990 basic deduction of \$6169 and applied the

appropriate personal tax rates and tax brackets to the average annual income for each industry. Average weekly earnings for Agriculture and Fishing & Trapping are not available. Appendix VI describes the procedure used to estimate these and includes a summary of average earnings in the other industries.

4. Estimate after-tax income associated with Unemployment Insurance payments, pensions, and investment income.

Unemployment Insurance: Information about Unemployment Insurance is available by regional district:

- the number of U.I. claimants (Canada Employment & Immigration administrative files)
- total annual dollar-value of transfer payments (Economic Dependency Profile).

It has been assumed that the average income of unemployed persons is the same throughout the regional district. As with earned income, the 1990 personal income tax rules are applied to the average income to approximate after-tax income.

Pensions: The number of retired individuals in each area is estimated to be the number of Old Age Security (O.A.S.) recipients who are over 65. In reality, some older than 65 will still be working while some younger than 65 will be retired. Assume that these are about equal in number. Pension income, as claimed on tax returns, is available by local area. This amount is divided by the number of O.A.S. recipients who are over 65 to estimate the average pension income per person. After-tax pension income is then estimated.

Investment Income: Total investment income claimed on tax returns is also available by local area. To estimate after-tax investment income, an effective tax rate for each regional district is calculated. The Revenue Canada publication, *Taxation Statistics 1991*, provides information from all tax returns for each regional district. "Total tax payable" is divided by "total income assessed" to furnish an effective tax rate which, in turn, is used to estimate after-tax investment income. This includes, however, both basic and nonbasic components. Interest from banks would, for example, be basic; rental income would be nonbasic. Because we do not have enough information to separate these, investment income has not been included in this study.

5. Calculate community employment dependencies for each of the basic sectors. Now that the income attributable to each of the basic sectors has been estimated, the calculation of income-based employment dependencies is almost trivial. Income in each of the basic sectors is divided by the total income in all of the basic sectors.

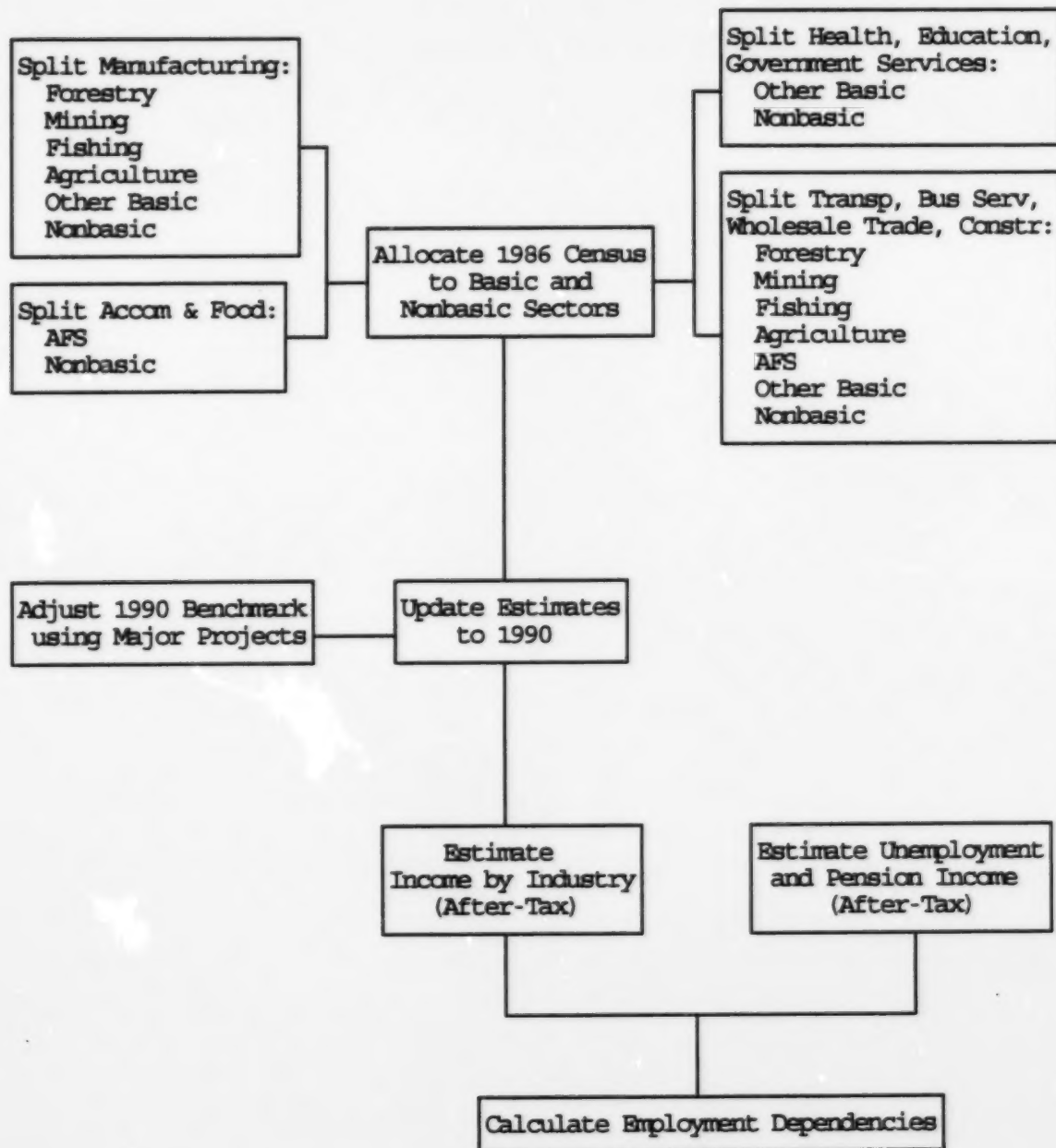
In the Fernie area, for example, the following incomes (in thousands of dollars) and employment dependencies (%) were calculated for each of the basic sectors:

Forestry	Mining	Fishing	Agric	AFS	Other	U.I.	Pension	Total
12,637	40,787	0	1,801	4,919	800	6,082	9,950	76,975
16%	53%	0%	2%	6%	1%	8%	13%	100%

The Fernie area is $12,637 \div 76,975 = 16\%$ dependent on Forestry, $40,787 \div 76,975 = 53\%$ dependent on Mining, and so on.

These percentages are the numbers which appear in Table 1.

2.2 Flow Chart



2.3 Data Sources

The following sources of information were used in this study:

1986 Census of Canada

1990 Labour Force Survey

British Columbia Manufacturers' Directory (1990)

British Columbia Regional Index (1989)

British Columbia Major Projects Inventory (1986-1990)

Visitor '89 ... A Travel Survey of Visitors to British Columbia, B.C. Ministry of Tourism

1984 British Columbia Input Output Model/Database (BCIOM)

Dun & Bradstreet (1989)

Economic Dependency Profile, Small Area and Administrative Data Division, Statistics Canada (1989)

Major Primary Timber Processing Facilities in British Columbia, Industry Development Branch, Ministry of Forests (1990)

British Columbia Forest Industry Statistical Tables, compiled by the Council of Forest Industries of British Columbia (April 1991)

Unemployment Insurance Statistics, Canada Employment & Immigration Commission's administrative files (1990)

British Columbia Taxation Statistics (1989)

B.C. Industrial Comparison - Average Weekly Earnings (1990)

British Columbia Economic Accounts (1990)

2.4 Payroll Data and Transfer Payments

As noted earlier, many data sources were used for this study. An additional source would be information from Revenue Canada on incomes reported for tax calculation purposes. About half-way through this project we became aware that such data might be available to us on an industry-specific and small area basis. Such data is very appealing because it would achieve a number of objectives:

1. **Comprehensiveness.** It would not call for the inferences about proportionality required for the use of survey data.
2. **Timeliness.** Being relatively current, probably for 1989, updating for regional changes would not be required.
3. **Income-Based.** Although the current study is income-based, the income attributed to each industry was estimated using provincial average incomes. If, for each community, the actual income associated with each industry were used, more reliable results would be achieved.

For these reasons, we initiated a pilot project to investigate the use of this data for one specific region of the province: Cariboo-Fort George.

While the potential of this source of data is still very appealing, the pilot project has run into a number of difficulties - the primary one being confidentiality. Statistics Canada cannot release to us - not even for internal use and processing - information received from Revenue Canada which could be used to identify the payroll of specific firms. For example, if there is one sawmill in a particular community, then the payroll of that mill must be suppressed.

In the Cariboo-Fort George trial, income for 28 sectors in 12 communities was requested. Statistics Canada has indicated that they would need to suppress 87 entries. As a result, we would need other sources of information to either provide estimates of the missing numbers or to disaggregate the information if industries or communities were combined in order to reduce the amount of suppression.

Due to various delays in initiating this pilot project, the results are not available for inclusion with this report.

3. Results

This section reports the findings for each of the areas in this study. The communities in each of these areas are listed in Appendix VII. Three types of results emerged from this study:

1. **Basic Sector Dependence:** the share of total basic income belonging to each of the basic sectors.
2. **Basic Income as a Fraction of Total Income:** the percentage of total income attributable to the basic sector.
3. **Basic Industry Dependence:** the share of total basic industry income belonging to each of the basic industries.

These results are presented in Sections 3.1, 3.2 and 3.3 respectively.

The abbreviations used for the economic sectors are as follows:

FOR	Forestry
MIN	Mining
F&T	Fishing and Trapping
AG	Agriculture
AFS	Accommodation and Food Services
OTH	Other Basic Industries (includes government and parts of manufacturing, transportation, construction, etc.)
UN	Unemployment Insurance
PEN	Pension

Sometimes we refer to Basic Sectors and at other times we refer to Basic Industries. The difference between these two designations is whether or not unemployment and pension incomes are included. Basic Sectors include these two categories; Basic Industries do not.

3.1 Basic Sector Dependence

TABLE 1

% of Basic Sector	Employment Income						Non-empl.	
	FOR	MIN	F&T	AG	AFS	OTH	UN	PEN
EAST KOOTENAY								
Fernie Area	16	53	0	2	6	1	8	13
Cranbrook-Kimberley Area	31	4	0	4	11	6	12	33
Invermere Area	41	5	0	6	21	0	9	18
CENTRAL KOOTENAY								
Castlegar-Arrow Lakes Area	54	2	0	1	6	9	9	19
Creston Area	21	4	0	15	6	14	9	31
Nelson Area	36	4	0	2	8	12	11	27
Salmon Arm Area	30	1	0	7	10	15	9	28
Golden Area	60	2	0	1	12	8	9	8
Revelstoke Area	27	2	0	2	12	29	10	18
OKANAGAN - BOUNDARY								
Peachland Area	20	11	0	15	6	9	12	26
Kelowna Area	10	3	0	11	8	15	11	42
Grand Forks-Greenwood Area	47	4	0	6	6	9	5	23
Trail-Rossland Area	5	55	0	0	6	3	6	26
Vernon Area	24	2	0	5	8	20	10	31
Spallumcheen Area	31	1	1	18	6	10	9	24
Princeton Area	35	34	0	3	6	1	7	14
Oliver-Osoyoos Area	6	3	0	25	6	10	9	41
Penticton Area	11	3	0	7	7	17	10	44
LILLOOET - THOMPSON								
Squamish Area	42	3	1	3	11	16	12	13
Lillooet Area	49	1	0	3	7	13	11	16
Ashcroft Area	21	22	0	11	7	15	8	15
Merritt Area	47	10	1	10	5	5	9	14
Kamloops Area	18	14	0	5	5	20	12	25
North Thompson Area	62	1	0	7	4	9	7	10
CARIBOO - FORT GEORGE								
Smithers-Houston Area	56	10	0	4	5	8	8	9
Burns Lake Area	65	0	0	5	4	8	8	10
Vanderhoof Area	70	2	0	4	3	4	8	8
Williams Lake Area	57	5	0	6	6	6	10	11
Quesnel Area	62	2	0	5	5	7	9	11
Prince George Area	58	2	0	2	5	15	9	8
McBride-Valemount Area	60	0	0	6	5	14	7	9

TABLE 1 (Concluded)

% of Basic Sector	Employment Income						Non-empl.	
	FOR	MIN	F&T	AG	AFS	OTH	UN	PEN
VANCOUVER ISLAND AND COAST								
Alberni Area	54	0	7	3	5	7	7	17
Gulf Islands Area	4	1	6	6	6	20	6	51
Victoria Area	3	1	1	3	7	33	7	45
Sooke-Port Renfrew Area	30	1	5	2	6	19	6	31
Courtenay-Comox Area	16	3	6	6	6	19	11	33
Campbell River Area	55	6	5	1	6	5	9	13
Bute Inlet Area	16	1	35	2	14	4	10	16
Duncan Area	38	1	2	6	5	9	8	30
Lake Cowichan Area	72	0	1	2	3	1	6	14
Ladysmith Area	45	1	4	2	3	5	6	35
Alert Bay Area	20	1	38	0	7	17	9	8
Port Hardy Area	55	22	4	1	5	2	8	3
Nanaimo Area	28	2	4	2	6	10	11	37
Parksville-Qualicum Area	14	1	6	2	8	9	8	52
PEACE RIVER - STIKINE								
Dawson Creek Area	30	33	0	6	6	6	8	10
Fort St. John Area	19	26	0	11	8	17	9	9
Fort Nelson Area	34	23	1	3	8	18	9	4
Ocean Falls Area	28	1	15	2	6	24	16	8
Kitimat-Terrace Area	34	1	1	1	5	41	10	8
Hazelton Area	70	0	2	2	3	9	8	6
Stewart Area	28	13	5	0	4	38	9	2
Queen Charlotte Islands Area	41	0	20	0	5	18	11	5
Prince Rupert Area	24	4	31	0	6	13	12	9
Stikine Area	4	71	2	1	3	10	6	3

This table summarizes the basic sector dependencies for each community. The entries (expressed as percentages) represent the dependence of the communities on each of the basic sectors: income in each basic sector divided by total income in all basic sectors. (Rows may not sum to 100% due to rounding).

It is important to point out that the absolute size of each number in the table is relative to the other numbers in that row. Comparisons of the numbers in a vertical column must be interpreted correctly. For example, the AFS dependence of Golden is 12 while that of Kelowna is 8. This does **not** mean that Golden is a more popular travel destination than Kelowna. Rather, it means that, considering the driving sectors of the two local economies, Golden is more dependent than Kelowna on the Accommodation and Food Services sector.

3.2 Basic Income as a Fraction of Total Income

TABLE 2

EAST KOOTENAY		VANCOUVER ISLAND & COAST	
Fernie Area	56	Alberni Area	59
Cranbrook-Kimberley Area	40	Gulf Islands Area	45
Invermere Area	54	Victoria Area	40
CENTRAL KOOTENAY		Sooke-Port Renfrew Area	48
Castlegar-Arrow Lakes Area	56	Courtenay-Comox Area	45
Creston Area	55	Campbell River Area	56
Nelson Area	49	Bute Inlet Area	54
Salmon Arm Area	54	Duncan Area	48
Golden Area	62	Lake Cowichan Area	60
Revelstoke Area	52	Ladysmith Area	56
OKANAGAN - BOUNDARY		Alert Bay Area	52
Peachland Area	40	Port Hardy Area	58
Kelowna Area	41	Nanaimo Area	39
Grand Forks-Greenwood Area	57	Parksville-Qualicum Area	51
Trail-Rossland Area	55	CARIBOO - FORT GEORGE	
Vernon Area	45	Smithers-Houston Area	59
Spallumcheen Area	52	Burns Lake Area	59
Princeton Area	62	Vanderhoof Area	62
Oliver-Osoyoos Area	53	Williams Lake Area	55
Penticton Area	46	Quesnel Area	59
LILLOOET - THOMPSON		Prince George Area	48
Squamish Area	51	McBride-Valemount Area	65
Lillooet Area	54	PEACE RIVER - STIKINE	
Ashcroft Area	61	Dawson Creek Area	50
Merritt Area	58	Fort St. John Area	46
Kamloops Area	41	Fort Nelson Area	47
North Thompson Area	71	Ocean Falls Area	60
		Kitimat-Terrace Area	54
		Hazelton Area	64
		Stewart Area	56
		Queen Charlotte Islands Area	59
		Prince Rupert Area	55
		Stikine Area	66

This table expresses income in the basic sectors as a percentage of the total income - both basic and nonbasic - in the community. Note that basic income is usually a smaller fraction of total income in highly-populated areas and areas that provide services to the surrounding environs. This is probably because the service sector is more developed in these regions.

3.3 Basic Industry Dependence

TABLE 3

% of Basic Industry	FOR	MIN	F&T	AG	AFS	OTH
EAST KOOTENAY						
Fernie Area	21	67	0	3	8	1
Cranbrook-Kimberley Area	57	7	0	7	19	10
Invermere Area	57	6	0	8	28	0
CENTRAL KOOTENAY						
Castlegar-Arrow Lakes Area	75	2	0	2	9	12
Creston Area	35	6	0	25	11	24
Nelson Area	57	7	0	4	13	19
Salmon Arm Area	47	2	1	11	15	24
Golden Area	72	3	0	1	15	9
Revelstoke Area	37	2	0	2	17	41
OKANAGAN - BOUNDARY						
Peachland Area	32	18	0	25	10	15
Kelowna Area	20	7	0	24	16	32
Grand Forks-Greenwood Area	65	6	0	8	8	13
Trail-Rossland Area	7	81	0	0	8	4
Vernon Area	40	3	0	9	13	34
Spallumcheen Area	47	2	1	26	9	15
Princeton Area	44	43	0	3	8	1
Oliver-Osoyoos Area	12	5	1	50	11	20
Penticton Area	23	7	1	16	16	38
LILLOOET - THOMPSON						
Squamish Area	56	4	1	4	15	21
Lillooet Area	67	2	0	4	9	18
Ashcroft Area	28	28	1	15	9	19
Merritt Area	60	13	1	12	6	7
Kamloops Area	29	22	0	8	9	32
North Thompson Area	74	2	0	8	4	11
CARIBOO - FORT GEORGE						
Smithers-Houston Area	67	12	0	5	6	10
Burns Lake Area	79	0	0	6	4	10
Vanderhoof Area	83	3	0	5	4	5
Williams Lake Area	72	6	0	7	8	7
Quesnel Area	77	2	0	6	6	9
Prince George Area	70	3	0	3	6	18
McBride-Valemount Area	71	0	0	7	6	16

TABLE 3 (Concluded)

% of Basic Industry	FOR	MIN	F&T	AG	AFS	OTH
VANCOUVER ISLAND AND COAST						
Alberni Area	71	0	9	4	7	9
Gulf Islands Area	9	2	14	14	13	47
Victoria Area	7	2	2	6	14	68
Sooke-Port Renfrew Area	48	2	9	3	9	30
Courtenay-Comox Area	29	5	10	11	11	34
Campbell River Area	70	8	6	2	8	6
Bute Inlet Area	22	2	48	3	19	6
Duncan Area	62	2	3	10	8	15
Lake Cowichan Area	91	0	1	3	3	2
Ladysmith Area	75	1	6	3	5	9
Alert Bay Area	24	1	45	0	8	21
Port Hardy Area	61	25	5	1	6	3
Nanaimo Area	54	3	7	5	12	20
Parksville-Qualicum Area	35	3	16	4	19	23
PEACE RIVER - STIKINE						
Dawson Creek Area	36	40	0	8	8	7
Fort St. John Area	23	32	0	13	10	21
Fort Nelson Area	39	27	1	3	9	21
Ocean Falls Area	37	1	20	2	8	32
Kitimat-Terrace Area	41	1	1	1	6	50
Hazelton Area	80	0	3	2	4	10
Stewart Area	32	15	5	0	5	43
Queen Charlotte Islands Area	48	0	23	0	7	21
Prince Rupert Area	30	6	39	0	8	17
Stikine Area	4	79	2	1	3	11

Table 3 is very similar to Table 1 except that it displays basic *industry* dependence rather than basic *sector* dependence - non-employment income is excluded. There may be times when it is more appropriate to consider dependence on industries only.

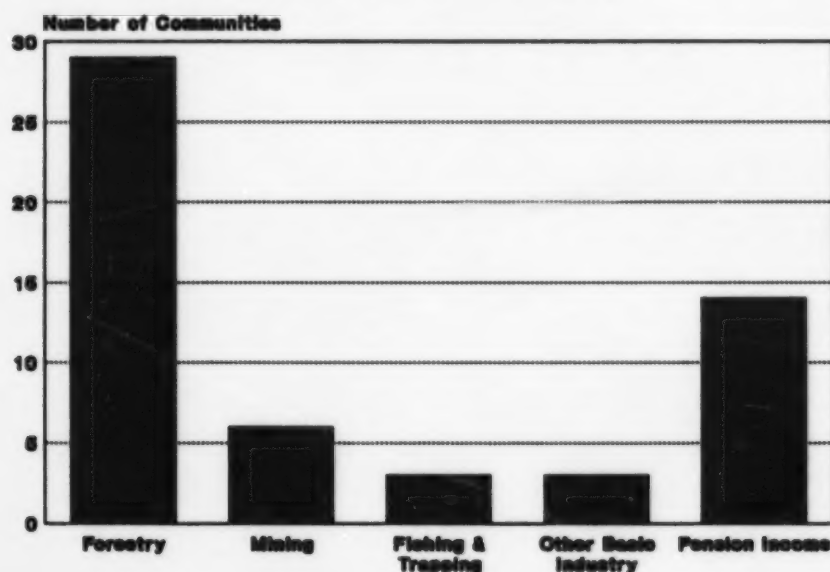
4. Discussion of Results

4.1 Basic Sector Dependence

This study shows, not surprisingly, that forestry is the dominant sector in many B.C. communities. Of the 55 communities studied, over half earn at least 30% of their basic income from the forestry sector. What may be surprising is that pension income is also an important sector in several areas.

The numbers displayed in Table 1 can be interpreted and used to characterize the areas of British Columbia in a number of ways. One such way is illustrated in the following chart where each community has been allocated to the basic sector on which it is most dependent. The location and relative sizes of these areas are displayed on the map on page 18.

Dominant Basic Sector



Another way is to sort the communities into a number of categories depending upon whether the community is dominated by a single sector or is largely dependent on two sectors or is diversified and dependent on three or more sectors. There is some arbitrariness associated with such a classification scheme because some communities are near the boundaries between two categories. Nevertheless, a visual inspection of Table 1 could result in allocations of communities as follows.

1. Dominated by a Single Sector

A. Forestry

Invermere	North Thompson	McBride-Valemount
Castlegar	Smithers-Houston	Alberni
Golden	Burns Lake	Campbell River
Grand Forks	Vanderhoof	Lake Cowichan
Squamish	Williams Lake	Port Hardy
Lillooet	Quesnel	Hazelton
Merritt	Prince George	Queen Charlotte Islands

B. Mining

Fernie	Trail-Rossland	Stikine
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C. Fishing

Bute Inlet	Alert Bay	Prince Rupert
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D. Retired Persons

Kelowna	Gulf Islands	Courtenay-Comox
Penticton	Victoria	Parksville-Qualicum

2. Dual: Dependent on Two Major Sectors

A. Forestry and Retired Persons

Salmon Arm	Sooke-Port Renfrew	Ladysmith
Nelson	Duncan	Nanaimo
Cranbrook-Kimberley		

B. Forestry and Other Basic

Revelstoke	Kitimat-Terrace	Stewart
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C. Forestry and Mining

Princeton	Dawson Creek	Fort Nelson
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D. Agriculture and Retired Persons

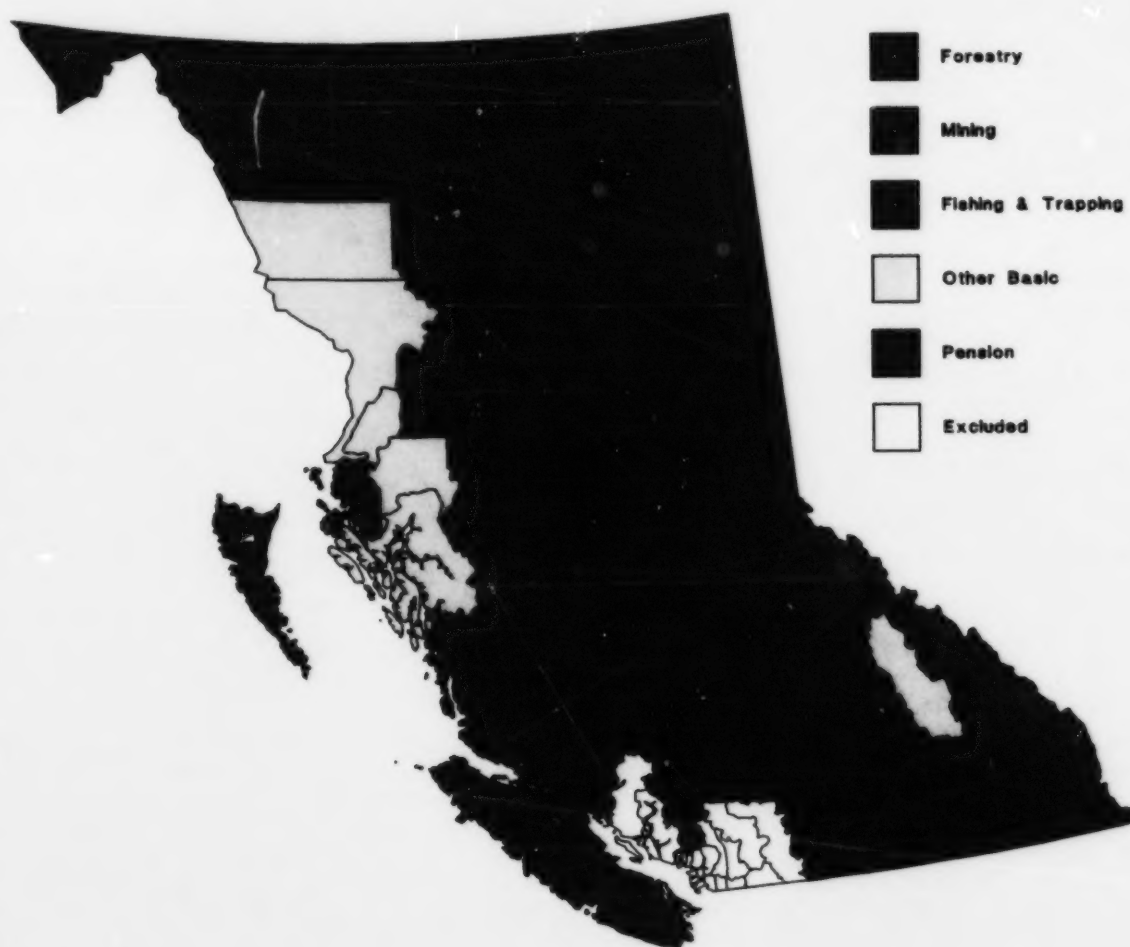
Oliver-Osoyoos

3. Diversified: Three or More Major Sectors

Peachland	Ashcroft	Ocean Falls
Vernon	Kamloops	Creston
Spallumcheen	Fort St. John	

BRITISH COLUMBIA

Dominant Basic Sectors



*Prepared by: Planning and Statistics Division, Ministry of Finance and Corporate Relations
February 1992*

4.2 Basic Industry Dependence

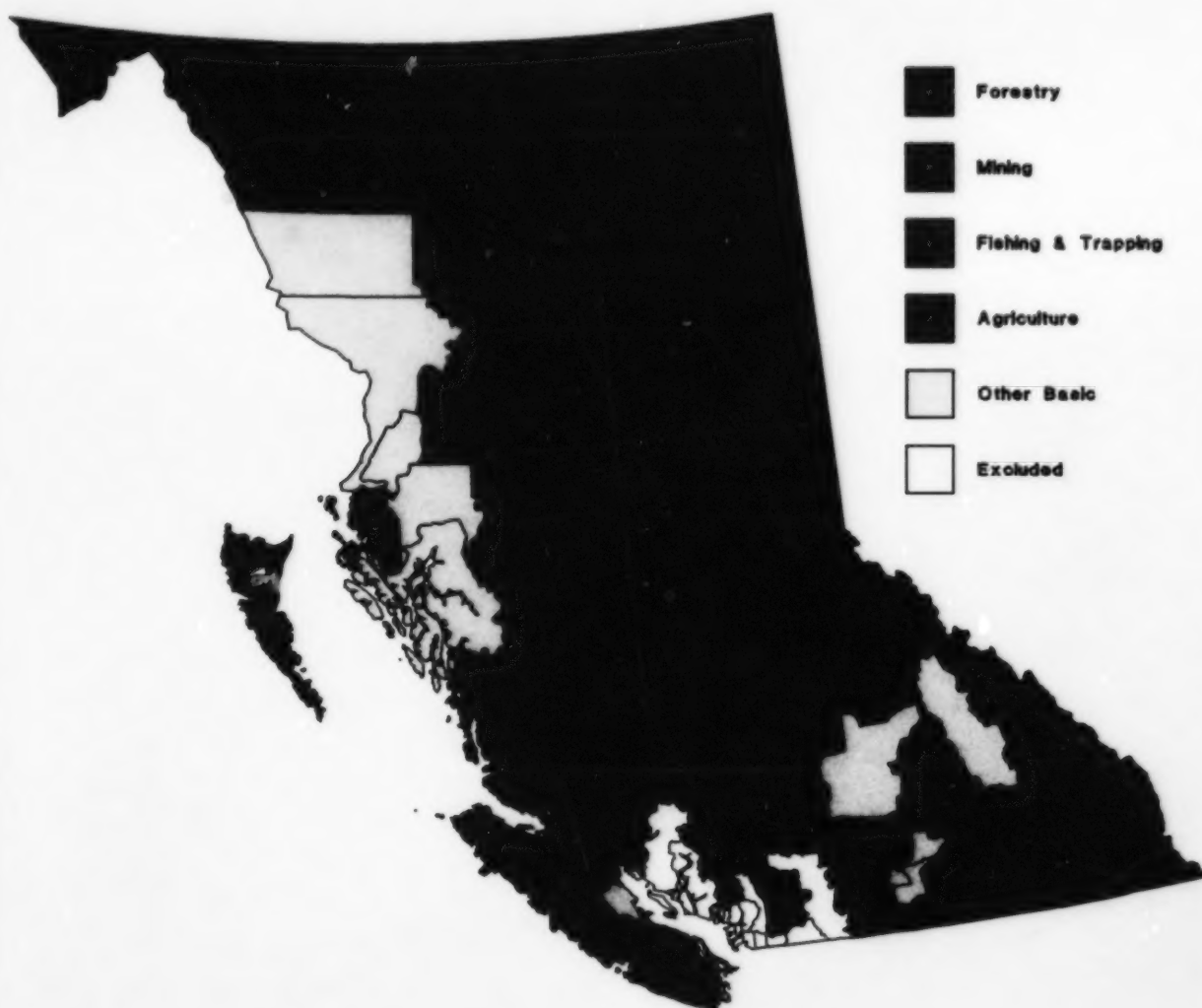
As noted in Section 3, Basic Industry dependence differs from Basic Sector dependence in that non-employment income - unemployment and pension income - is excluded.

The map of British Columbia on the following page displays the industry which is most dominant in each local area. The smaller areas shown on the two maps are local health areas, the sub-provincial areas for which the Planning and Statistics Division's mapping software is set up. For our application, it was convenient to re-express our results in terms of these local health areas.

It is important to keep in mind that these maps display only the dominant industry (or sector) in each area. The map does not distinguish between a community that is truly dominated by mining, for example, and another community whose economy is diversified with the local economy being slightly more dependent on mining than on the other industries. As the analysis in Section 4.1 indicated, many local areas in British Columbia are dual (dependent on two major sectors) or diversified. To get a truer sense of the economic makeup of an area, the tables in Section 3.1 or 3.3 should be consulted.

BRITISH COLUMBIA

Dominant Basic Industries



*Prepared by: Planning and Statistics Division, Ministry of Finance and Corporate Relations
February 1992*

4.3 Other Points to Consider

There are other points - notably some assumptions about Accommodation and Food Services and Non-employment income - that deserve comment.

Accommodation and Food Services (AFS): As discussed briefly in Section 2 (and in more detail in Appendix III), the expenditures of travellers in a local area are economically equivalent to exports from the local area. Consequently, employees serving those travellers are considered basic.

It is tempting to call this category *Tourism*. This label, however, would not be accurate for two main reasons.

The first is that no attempt has been made to include other expenditures made by tourists - car rentals and local purchases of gasoline, souvenirs or groceries. Because of these omissions, the AFS dependence may understate the impacts of Tourism in some areas.

The second reason is that business travel has not been separated from tourist travel. Some travel occurs for business reasons and should, therefore, be allocated to the sector that the business is in. It could be truckers hauling products or executives visiting plants. Information that would allow us to separate business travel from conventional tourism is, however, unavailable. The AFS dependence may overstate the impacts of vacation-type tourism for this reason.

Non-Employment Income: The inclusion of unemployment and pension income is supported by Schwartz in *A Guide to Regional Multiplier Estimation* [5]. Retired individuals, as well as those who are unemployed, make daily expenditures in the local economy just as those who are employed do. Their income comes from outside the local economy - pensions and government transfer payments. At the same time, these individuals do not perform services for pay in the local area. Thus, they must be basic components of the local economy.

In the case of the unemployed, the impact is understated to some extent because only Unemployment Insurance payments are counted. Welfare payments and withdrawals from savings are not.

The dependency on the retired population may also be understated because income from investments has not been counted. Offsetting this to some extent is the fact that many pensioners, who can afford to do so, may spend substantial periods of time outside the local area.

5. Recommendations for Further Study:

We believe that the results developed in this study provide an accurate overview of driving industries and income sources for British Columbia's smaller communities. The nature of this work, the number of data sources consulted and the methodology employed are, by necessity, new and unique. Because of the newness of the approach, the results should be considered experimental until they can be validated against both local conditions and other data sources that reinforce the numbers.

We also understand the critical importance of these figures, both to policy development work of a provincial-wide nature and to local planners. We therefore recommend that continued work be undertaken to build on this initial study as follows:

1. **Update these results as soon as appropriate information from the 1991 Census is available.** This will probably be in late 1993.

The foundation of the current estimates is the 1986 Census. There is no source of information that is as comprehensive or as accurate which is more up-to-date. We have tried to take into account regional employment trends, sectoral trends, particular projects which have been developed, information from surveys, and company listings such as the Manufacturers' Directory in order to update this information to reflect 1990 conditions. The result is a set of estimates which are realistic in the sense that they are consistent with everything we know about each area and its economic activity.

2. **Include the basic portion of investment income as a component of the basic sector.** Although substantial in many areas, non-employment income is understated by the exclusion of investment income. Data which distinguishes the components of investment income will be required.
3. **Complete the pilot project using Payroll Data from Revenue Canada as discussed in Section 2.4.**

References

1. Horne, Garry and Charlotte Penner, *Local Employment Impacts of the Forest Industry*, Forest Resources Commission Background Papers, Vol. 4, April 1991.
2. Reed, F. L. C. and Associates Ltd., *The British Columbia Forest Industry - Its Direct and Indirect Impact on the Economy*, prepared for British Columbia Department of Lands, Forests and Water Resources, 1973.
3. Reed, F. L. C. and Associates Ltd., *The British Columbia Forest Industry - Its Direct and Indirect Impact on the Economy*, prepared for British Columbia Forest Service, 1975.
4. White, W., B. Netzel, S. Carr, and G. A. Fraser, *Forest Sector Dependence in Rural British Columbia, 1971-1981*, Information Report BC-X-278, Pacific Forestry Centre, 1986.
5. Schwartz, Harvey, *A Guide to Regional Multiplier Estimation*, prepared for the Project Assessment and Evaluation Branch, Department of Regional Economic Expansion, 1982.

APPENDIX I

Disaggregating Total Manufacturing Employment

Because only *total* manufacturing employment is available by small area, we must use another source of information to allocate manufacturing employment to the basic and nonbasic sectors of the economy.

The Manufacturers' Directory is a listing of manufacturing firms in British Columbia. Although the data base is continually updated, we have ensured that the information used is consistent with the 1990 publication. The following pieces of information were used:

1. community codes
2. employment ranges
3. SIC (Standard Industrial Classification) codes

Establishments are assigned to the appropriate area based on community codes.

The number of employees in each firm is estimated using the midpoint of the employment range. (Unfortunately, the data base provides ranges rather than the specific number of employees). For large firms (100 or more employees), either an employment estimate from the Regional Development Officer is used or the Dun & Bradstreet (D&B) register is consulted. (If using D&B, the estimate is used only if the number is within the range specified in the Manufacturers' Directory - otherwise, the midpoint of the range is presumed to be a better assumption). A list of employment ranges and midpoints follows:

Range	Midpoint
1-5	3
6-14	10
15-24	19
25-49	37
50-99	74
100-199	150
200-499	350
500-999	750
1000 and over	1000

In some cases, no employment range was available. When this happened, we

1. checked Dun & Bradstreet. If the firm is listed, we used this estimate. If not, we
2. calculated the average employment of other establishments with the same SIC code in the regional district. If no other firms in the regional district had the same SIC code, we

3. calculated the average employment of other firms with the same SIC code in the region.

A comparison with the publication, Major Primary Timber Processing Facilities in British Columbia, has indicated that not all forestry-related establishments have been listed in the Manufacturers' Directory. To make our employment estimates more complete, we have ensured that all large timber processing firms have been included in our analysis.

SIC codes are used to allocate each manufacturing firm to one of the following categories:

Forestry:	25	Wood Industries
	27	Paper and Allied Products Industries
Mining:	29	Primary Metal Industries
	36	Refined Petroleum and Coal Products Industries
Fishing & Trapping:	102	Fish Products Industry
Agriculture:	0162	Greenhouse Products Industry
	10	Food Industries
		EXCEPT 102 Fish Products
		107 Bakery Products
	5932	Seeds and Seed Processing Industry, Wholesale
Nonbasic:	107	Bakery Products Industry
	28	Printing, Publishing and Allied Industries
	352	Hydraulic Cement Industry
	355	Ready-Mix Concrete Industry
	397	Signs and Display Industry
	7721	Computer Services Industry, Wholesale
Other Basic:		everything else

There are some exceptions. Dental labs, opticians and plumbing & heating services, for example, would be assigned to Other Basic based on the SIC codes. But because these types of establishments serve the local community, they are assigned to Nonbasic instead.

Having estimated the number of employees in each basic and nonbasic sector, percentages of total manufacturing employment are calculated. These percentages are applied to the total manufacturing employment for the area to produce manufacturing employment by basic/nonbasic sector.

APPENDIX II

The Modified Location Quotient Method

Modified location quotients are used to allocate employment in the Educational, Health and Government Service sectors to the Nonbasic and Other Basic sectors. They are also used to determine the amount of nonbasic employment in Transportation, Wholesale Trade, Business Services and Construction (see Appendix IV).

The location quotient is a measure of relative concentration or specialization. As such, this method can be used to determine whether an industry is classified as basic or nonbasic. Workers in excess of the norm established by the provincial economy are assigned to the basic sector of the local economy; all others are assumed to be satisfying local demand.

An example will most clearly demonstrate this method. Suppose we have the following information:

	Provincial	Local Area
Number of employees in Health Services	77,800	610
Total number of employees in region	1,017,200	6,550

The modified location quotient - a comparison between the local area's share of employment in Health Services to the province's share - is:

$$MLQ = (610 \div 6,550) \div (77,800 \div 1,017,200) = 1.22$$

If the location quotient is less than one, we assume that Health Services satisfy the needs of the local community only. In this case, however, the location quotient is greater than one. Some of the employment must be allocated to the basic sector. The MLQ is used to do this:

$$(1 + 1.22) \times 610 = 500 \text{ Health Services employees are allocated to Nonbasic.}$$
$$(0.22 \div 1.22) \times 610 = 110 \text{ are allocated to Other Basic.}$$

Inherent in this method is the assumption that the province is neither a net exporter nor a net importer. In B.C., this certainly is not true. And although one would not expect the province to export Health or Educational Services, according to the 1984 BCIOM, British Columbia does, in fact export these services - 11% and 3% of domestic production, respectively. As a result, the Location Quotient method has been modified to take into account the effect of B.C. exports. Jobs resulting from production associated with exports are subtracted from the provincial benchmark before the modified location quotients are calculated.

APPENDIX III

Accommodation and Food Services

Employment in Accommodation and Food Services is both basic and nonbasic. Accommodation Services are entirely basic - it is unlikely that the local population makes use of these services. Food Services, because they serve both residents and nonresidents, are both basic and nonbasic.

In order to distribute employment in Accommodation and Food Services to the basic and nonbasic sectors:

1. estimate separate employment figures for each type of service
2. split employment in Food Services between basic and nonbasic.

Separate Accommodation and Food Services: Dun & Bradstreet provides separate employment estimates for Accommodation Services and Food Services. These are available by community. This ratio is used to split the combined employment estimate.

Allocate Food Services to Basic and Nonbasic: A number of data sources were used to split food services:

1. Dun & Bradstreet survey: employment in Accommodation and in Food.
2. British Columbia Input Output Model: Job to Output ratios. The Job to Output ratio is the number of jobs (person-years of employment) required to produce \$1 million worth of sales in a particular industry. According to the BCIOM, 23.793 jobs are needed in Accommodation Services to produce \$1,000,000 of sales in that industry. In Food Services, 32.152 jobs are needed.
3. Visitor '89 ... A Travel Survey of Visitors to British Columbia (Ministry of Tourism): daily tourist expenditures on restaurants and accommodation in each of the Tourism Regions in the province.

Summary of information:	Accommodation	Food
Employment	e1	e2
Job to Output ratios	J1 = 23.793	J2 = 32.152
Tourist expenditures	P1	P2

- $e1 + J1$ is the expenditures by tourists on Accommodation.
- it follows that they must spend $(P2 + P1) \times (e1 + J1)$ on Food Services.
- this expenditure on Food Services should employ $J2 \times (P2 + P1) \times (e1 + J1)$ workers.
- but basic employment in Food Services is $f \times e2$, some fraction of total employment in Food Services. Therefore, $f = (J2 + e2) \times (P2 + P1) \times (e1 + J1)$;
 $0 \leq f \leq 1$

So Food Services employment is split: $f \times e2$ is basic and $(1 - f) \times e2$ is nonbasic. And Accommodation Services are all basic.

Employment in the basic sector can be attributed to both tourism and business travel. Unfortunately, data that would allow us to distinguish between these two sources is not available. Ideally, business travel associated with forestry would be allocated to the Forestry sector, business travel associated with mining would be allocated to the Mining sector, and so on. Consequently, employment associated with Accommodation and Food Services may be over-estimated.

APPENDIX IV

Allocating Transportation, Wholesale Trade, Business Services and Construction to Basic and Nonbasic Sectors

Employment in Transportation, Wholesale Trade, Business Services and Construction Industries are allocated to the basic and nonbasic sectors using the inter-industry linkages of the BCIOM.

The USE matrix shows the value of commodities used by each industry in its production process. The D matrix - or market share matrix - shows what proportion of a given commodity is made by each industry. Job to output ratios tie the number of jobs in an industry to the level of production.

These three pieces of information are combined to define a matrix (called EMPL). EMPL indicates the number of jobs in each industry that are directly stimulated by the other industries. (These are known as first-round impacts). From this matrix we could, for example, determine the number of jobs in Transportation that are created by the Logging Industry.

This process requires two major assumptions. The first assumption is that all first-round impacts are local. The second is that provincial inter-industry relationships are also valid at the local level.

For this method, we shall define *driver industries*, those industries which induce employment in other industries, and *driven industries*, those industries whose employment levels are induced to some extent by other industries. In the previous example, Logging is a driver industry which creates employment in Transportation, a driven industry. The driven industries of interest in this study are:

- Transportation
- Wholesale Trade
- Business Services
- Construction

The set of driver industries comprising the basic sectors in this study are:

- Forestry
- Forestry - Manufacturing
- Mining
- Mining - Manufacturing
- Fishing & Trapping
- Fishing & Trapping - Manufacturing
- Agriculture
- Agriculture - Manufacturing
- Food and Accommodation Services
- Other

The purpose of this procedure is to allocate employment in the driven industries (as listed) to the basic and nonbasic sectors of the economy in each local area.

The rows of EMPL refer to the driver industries and the columns refer to the driven industries. The actual entries are provincial employment levels. Define a vector, JOBS, to be the total number of jobs, provincially, in each industry. (These are the row sums of EMPL).

Suppose that Logging is industry 3 and Transportation is industry 32.

- EMPL[3, 32] is the number of jobs in Transportation that are created by the Logging Industry
- JOBS[32] is the total number of jobs in the Logging Industry.

Using this information we deduce that for every job in Logging there are EMPL[3, 32] + JOBS[32] jobs created in the Transportation sector.

Suppose that, in some B.C. community, there are 150 employed in the Logging industry. Then

$$150 \times \text{EMPL}[3, 32] + \text{JOBS}[32]$$

jobs in Transportation would be imputed to the forest sector (in addition to transportation jobs created by other forestry industries).

For each local area, employment in the driver industries is known. The following matrix indicates how many jobs in each of the driven industries are created by one job in each driving industry:

	Transport- ation	Wholesale Trade	Business Services	Construction
Forestry	.132	.017	.012	.036
Forestry - Manuf.	.012	.043	.027	.010
Mining	.014	.050	.053	.018
Mining - Manuf.	.009	.014	.019	.012
Fishing & Trapping	.010	.023	.005	.012
Fishing & Trapping - Manuf.	.008	.040	.013	.003
Agriculture	.002	.014	.003	.007
Agriculture - Manuf.	.008	.040	.013	.003
Food and Accommodation	.002	.007	.008	.002
Other	.017	.030	.040	.008

To return to the previous example, 150 jobs in Logging would create

$$150 \times 0.132 = 19.8$$

jobs in Transportation. However, 150 jobs in the Agriculture industry would create only

$$150 \times 0.002 = 0.3$$

jobs in Transportation.

After employment created by each of the driver industries has been estimated, there will probably be some jobs that have not been allocated to any of the basic sectors.

In Prince Rupert, for example, there is a high number of unallocated employees in the transportation sector. This unallocated employment is most sensibly designated as either Nonbasic or Other Basic. The modified location quotient, described in Appendix II, is used to determine the amount allocated to each of these sectors.

The MLQ provides benchmark employment levels for the nonbasic sector based on provincial averages. Unallocated employment up to this benchmark level is allocated to the Nonbasic sector; employment in excess of the benchmark is allocated to Other Basic.

APPENDIX V

Employment Adjustments for Major Projects

Because the disaggregated employment estimations are for 1986 (the census year) and the regional benchmark employment levels are for 1990, employment adjustments have been made.

In conjunction with the Ministry of Economic Development, the Planning and Statistics Division maintains a Major Projects Inventory: an inventory of projects in the province that are in excess of \$50 million. For each project, various pieces of information are recorded: start and completion dates, cost, employment during construction and employment changes during the operational phase.

The employment information in this inventory is used to make adjustments before the 1986 estimates are reconciled to the 1990 benchmarks.

Projects starting or finishing between 1986 and 1990 are assigned to the appropriate area and appropriate industry group. For projects that begin or end in 1986 and 1990, the adjustment is half of the employment change because it is not known whether the project starts or finishes at the beginning or end of the year.

The 1990 benchmark is modified by these adjustments. The 1986 estimates are scaled up or down so that the totals agree with the adjusted 1990 benchmark. Finally, the major projects adjustments are added to or subtracted from this to provide the final estimates of 1990 employment by industry for each local area.

APPENDIX VI

Average Weekly Earnings

The before- and after-tax weekly earnings for each industry are summarized below. The source of before-tax earnings was *B.C. Industrial comparison - Average Weekly Earnings*. Average earnings for Forestry-Related Manufacturing, Agriculture and Fishing & Trapping were, however, not directly available from this data source. The method used to estimate earnings for these industries is described later in this appendix.

After-tax annual earnings were approximated using the following routine:

1. multiply weekly earnings by 52 to get annual income.
2. subtract the basic deduction of \$6,169.
3. apply the appropriate tax rate(s):

\$0 - 28,275	17%
\$28,276 - 56,550	26%
over \$56,550	29%

Average Weekly Earnings

	Before-Tax	After-Tax
Goods Producing Industries	656.44	517.93
Agriculture	359.47	297.44
Forestry	724.25	559.84
Fishing & Trapping	640.38	506.00
Mining	869.32	647.77
Manufacturing (Total)	648.51	512.04
Forestry-Related Manufacturing	741.32	570.18
Construction	602.98	478.24
Service Producing Industries	475.26	383.41
Transp, Commun, Utilities	676.30	530.78
Trade	402.85	329.65
Finance & Related	534.41	427.33
Comm. & Pers. Service	420.39	342.67
Education	585.58	465.32
Health and Welfare	458.38	370.88
Accommodation and Food	229.91	201.25
Public Administration	668.09	525.80

Forestry-Related Manufacturing: In *B.C. Industrial Comparison*, average weekly earnings are available for three specific types of Manufacturing - Food & Beverage,

Wood and Paper & Allied - in addition to Total Manufacturing. In our study, we have identified forestry-related but have not made a distinction between Wood and Paper & Allied.

In order to make use of this more specific information, Wood Manufacturing and Paper & Allied Manufacturing were combined in a weighted average to produce an estimate for Forestry-Related Manufacturing.

The calculations are summarized below.

	Wood	Paper & Allied
Average Weekly Earnings	687.41	882.09
Employment in Industry (thousands) (1990 Labour Force Survey)	47	18

Average weekly earnings in Forestry-Related Manufacturing are:
 $687.41 \times (47 \div 65) + 882.09 \times (18 \div 65) = \$741.32$

Agriculture and Fishing & Trapping: Due to the nature of these industries - a large proportion of the workers are self-employed - approximations of average earnings are not readily available.

According to the British Columbia Economic Accounts, total annual labour income in Agriculture is \$504.7 million. The Labour Force Survey estimates employment in this industry to be 27,000. Before-tax weekly earnings in Agriculture are estimated to be:

$$504,700,000 \div 27,000 = 18,693$$

$$18,693 \div 52 = \$ 359.47$$

Similarly, before-tax weekly earnings in Fishing & Trapping are estimated to be:

$$233,100,000 \div 7,000 = 33,300$$

$$33,300 \div 52 = \$ 640.38$$

APPENDIX VII

Communities by Area

Fernie Area	Castlegar-Arrow Lakes Area	Nelson Area
Baynes Lake	Blueberry Creek	Argenta
Elkford	Brilliant	Balfour
Elko	Brouse	Beasley
Fernie	Burton	Blewett
Galloway	Castlegar	Bonnington
Hosmer	Crescent Bay	Harrop
Jaffray	Edgewood	Hills
Sparwood	Glade	Kaslo
West Fernie	Glenbank	Nelson
	Nakusp	New Denver
Cranbrook-Kimberley Area	Ootischenia Flats	Passmore
Bull River	Raspberry	Procter
Cranbrook	Fauquier	Riondel
Fort Steele	Shore Acres	Salmo
Jim Smith Lake	Tarrys	Shutty Bench
Kimberley	Thrums	Silverton
Meadowbrook		Slocan
Moyie	Creston Area	Slocan Park
Slaterville	Arrow Creek	South Slocan
Ta Ta Creek	Boswell	Winlaw
Wardner	Canyon	Ymir
Wasa Lake	Crawford Bay	Salmon Arm Area
Wycliffe	Creston	Blind Bay
Invermere Area	Erikson	Cambie
Brisco	Kitchener	Cedar Heights
Canal Flats	Lakeview	Falkland
Edgewater	Lister	Malakwa
Fairmont Hot Springs	Wynndel	Salmon Arm
Invermere	Yahk	Scotch Creek
Radium Hot Springs		Sicamous
Wilmer		Silver Creek
Windermere		Solsqua
		Sorrento
		White Lake
		Golden Area
		Field
		Golden
		Parson

Revelstoke Area

Mica Creek
Revelstoke

Peachland Area

Peachland
Shannon Lake Estates
Westbank

Kelowna Area

Carrs Landing
Kelowna
Okanagan Centre
Oyama
Winfield
Woodsdale

Grandforks-Greenwood Area

Almond Gardens
Beaverdell
Bridenville
Grand Forks
Greenwood
Midway
Rock Creek

Trail-Rossland Area

Beaver Falls
Fruitvale
Montrose
Oasis
Rivervale
Rossland
Trail
Warfield

Vernon Area

Coldstream
Lumby
Okanagan Landing
Vernon

Spallumcheen Area

Armstrong
Ashton Creek
Enderby
Grindrod
Spallumcheen
Trinity Creek

Princeton Area

Coalmont
Princeton
Tulameen

Oliver-Osoyoos Area

Cawston
Hedley
Keremeos
Olalla
Oliver
Osoyoos

Penticton Area

Kaleden
Naramata
Okanagan Falls
Penticton
Summerland
West Bench

Squamish Area

Birken
Britannia Beach
Mount Currie
Pemberton
Squamish
Whistler

Lillooet Area

Bralorne
Lillooet
Seton Portage
Shalath

Ashcroft Area

Ashcroft
Cache Creek
Clinton
Green Lake
Lytton
Seventy Mile House
Spences Bridge
Walhachin

Merritt Area

Colletville
Douglas Lake
Lower Nicola
Merritt

Kamloops Area

Chase
Kamloops
Logan Lake
Monte Creek
Monte Lake
Paul Lake
Pritchard
Savona
Westwold

North Thompson Area

Avola
Barriere
Birch Island
Blue River
Clearwater
Little Fort
McLure
Vavenby

Alberni Area

Bamfield
Beaver Creek
Port Alberni
Sproat Lake
Tofino
Ucluelet

Gulf Island Area

Fulford Harbour
Galiano Island
Ganges
Mayne Island
North Pender Island
Saturna Island
South Pender Island

Victoria Area

Central Saanich
Colwood
Esquimalt
Metchosin
North Saanich
Oak Bay
Saanich
Sidney
Victoria

Sooke-Port Renfrew Area

Jordan River
Port Renfrew
Saseenos
Sooke

Courtenay-Comox Area

Black Creek
Comox
Courtenay
Cumberland
Fanny Bay
Hornby Island
Little River
Meadowbrook
Royston
Saratoga Beach
Union Bay

Campbell River Area

Campbell River
Gold River
Oyster Bay
Oyster River
Sayward
Shelter Bay
Shelter Point
Stories Beach
Tahsis
Zeballos

Bute Inlet Area

Gorge Harbour
Heriot Bay
Quathiaski Cove

Duncan Area

Chemainus
Cobble Hill
Cowichan Bay
Duncan
Koksilah
Mill Bay
Shawnigan Lake

Lake Cowichan Area

Caycuse
Honeymoon Bay
Lake Cowichan
Youbou

Ladysmith Area

Ladysmith
Saltair
Thetis Island
Yellow Point

Alert Bay Area

Alert Bay
Sointula

Port Hardy Area

Coal Harbour
Holberg
Hyde Creek
Mahatta River
Port Alice
Port Hardy
Port McNeill
Woss Lake

Nanaimo Area

Cassidy
Cedar by the Sea
Extension
Gabriola Island
Lantzville
Nanaimo
Nanaimo Lakes
South Wellington
Winchelsea

Parksville-Qualicum Area

Arbutus Park
Beachcomber
Coombs
Dolphin Beach
Errington
Nanoose Bay
Nanoose Estates
Parksville
Qualicum Beach

Williams Lake Area

Alexis Creek
Anahim Lake
Big Lake Ranch
Chimney Valley
Commodore Heights
Deka Lake
Dugan Lake
Forest Grove
Fox Mountain
Horsefly
Lac La Hache
Likely
Lone Butte
McLeese Lake
Mile 108 Ranch
Riske Creek
South Lakeside
Williams Lake
100 Mile House
150 Mile House

Quesnel Area

Abbot Heights
Alexandria
Australian
Barlow
Bouchie Lake
Cottonwood
Kersley
Pinnacles
Quesnel
Wells

Prince George Area

Bear Lake
Hixon
Mackenzie
Prince George
Upper Fraser
Willow River

McBride-Valemount Area

Lamming Mills
McBride
Tete Jaune Cache
Valemount

Smithers-Houston Area

Driftwood Creek
Granisle
Houston
Smithers
Telkwa
Topley
Topley Landing
Walcott

Burns Lake Area

Burns Lake
Decker Lake
Palling
Tintagel

Vanderhoof Area

Endako
Fort Fraser
Fort St. James
Fraser Lake
Germansen Landing
Vanderhoof

Dawson Creek Area

Chetwynd
Dawson Creek
Lone Prairie
Moberley Lake
Pouce Coupe
Rolla
Tomslake
Tumbler Ridge
Tupper

Fort St. John Area

Baldonnel
Charlie Lake
Fort St. John
Hudson's Hope
Taylor
Wonowon

Fort Nelson Area

Fort Nelson
Muskwa Camp

Ocean Falls Area

Bella Bella
Bella Coola
Hagensborg
Martin Valley
Ocean Falls
Waglisla

Kitimat-Terrace Area

Brauns Island
Gossen Creek
Jackpine Flats
Kemano
Kitimat
Lakelse Lake
North Terrace
Old Remo
Rosswood
Terrace
Thornhill
Usk

Hazelton Area

Cedarvale
Hazelton
Kispiox Valley
Kitwanga
New Hazelton
South Hazelton
Two Mile

Stewart Area

Eddontenajon
Kitsault
Nass Camp
Stewart
Telegraph Creek

**Queen Charlotte Islands
Area**

Juskatla
Masset
Port Clements
Queen Charlotte City
Sandspit
Skidegate Landing
Tlell

Prince Rupert Area

Digby Island
Port Edward
Port Simpson
Prince Rupert

Stikine Area

Atlin
Cassiar
Dease Lake
Good Hope Lake
Lower Post